COMPAQ

ProLiant ML330

Setup and Installation Guide

First Edition (April 2000)
Part Number 173868-001
Compaq Computer Corporation

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About This Guide

This guide is designed to be used as step-by-step instructions for installation and as a reference for operation, troubleshooting, and future upgrades.

Text Conventions

This document uses the following conventions to distinguish elements of text:

Keys	Keys display in boldface. A plus sign (+) between two keys indicates that they should be pressed simultaneously.
USER INPUT	User input displays in a different typeface and in uppercase.
FILENAMES	File names display in uppercase italics.
Menu Options, Command Names, Dialog Box Names	These elements display in initial capital letters.
COMMANDS, DIRECTORY NAMES, and DRIVE NAMES	These elements display in uppercase.
Type	When you are instructed to *type* information, type the information **without** pressing the **Enter** key.
Enter	When you are instructed to *enter* information, type the information and then press the **Enter** key.

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Symbols in Text

These symbols may be found in the text of this guide. They have the following meanings:

WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.

CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information.

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Symbols on Equipment

These icons may be located on equipment in areas where hazardous conditions may exist:

This symbol, in conjunction with any of the following symbols, indicates the presence of a potential hazard.

WARNINGS: The potential for injury exists if warnings are not observed. Consult your documentation for specific details.

This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.

This symbol indicates the presence of hazardous electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure.

This symbol on an RJ-45 receptacle indicates a network interface connection.

WARNING: To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.

This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

WARNING: To reduce the risk of injury from a hot component, allow the surface to cool before touching.

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Getting Help

If you have a problem and have exhausted the information in this guide, you can get further information and other help in the following locations.

Compaq Technical Support

In North America, call the Compaq Technical Phone Support Center at 1-800-OK-COMPAQ. This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.

Outside North America, call the nearest Compaq Technical Support Phone Center. Telephone numbers for worldwide Technical Support Centers are listed on the Compaq website. Access the Compaq website by logging on to the Internet:

http://www.compaq.com

Be sure to have the following information available before you call Compaq:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and numbers
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level
- Detailed, specific questions

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Compaq Website

The Compaq website has information on this product as well as the latest drivers and Flash ROM images. You can access the Compaq website by logging on to the Internet:

http://www.compaq.com

Compaq Authorized Reseller

For the name of your nearest Compaq authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- Elsewhere, see the Compaq website for locations and telephone numbers:

  http://www.compaq.com

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Chapter 1

Server Features

The Compaq ProLiant ML330 delivers the latest performance features at an affordable price. As the primary server in a small-to-medium business, the ProLiant ML330 is an ideal server for applications such as file/print, simple database, and remote access. This business-critical server delivers Intel Pentium III technology, Error Checking and Correcting Memory, easy expandability, and leading server management tools such as Compaq Insight Manager and BIOS Setup Utility. Server features include:

- Intel 256-KB Pentium III processor with 133-MHz front side system bus
- 64 MB of PC133-MHz registered, Error Checking and Correcting (ECC), Synchronous Dynamic Random Access Memory (SDRAM) DIMMs, upgradable to 2 GB
- Capacity for five 18 GB hard drives for a maximum of 90 GB of internal storage
- Four removable media bays (three available)
- IDE CD-ROM drive
- 1.44-MB, 3.5-inch diskette drive
- Integrated Single Channel Wide-Ultra2 SCSI Controller
- Integrated PCI 10/100 Wake-On-LAN NIC
- Integrated ATI Rage XL Video Controller
- Three available 32-bit PCI slots and two 64-bit PCI slots
- CE Mark compliant power supply

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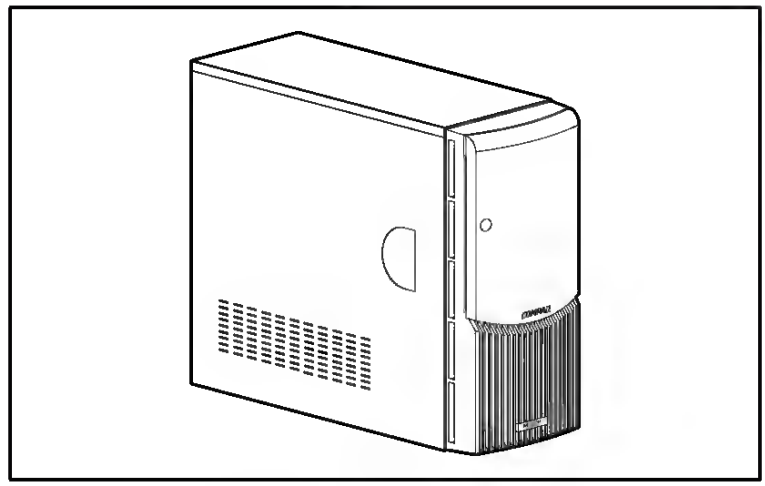

Figure 1-1. Compaq ProLiant ML330

Standard Features

The following features are standard on the ProLiant ML330, unless otherwise noted.

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Front Panel Components

The ProLiant ML330 supports a maximum of seven internal drive bays. Figure 1-2 and Table 1-1 show the drive configuration. Figure 1-3 and Table 1-2 show the front panel components, including buttons and LED indicators.

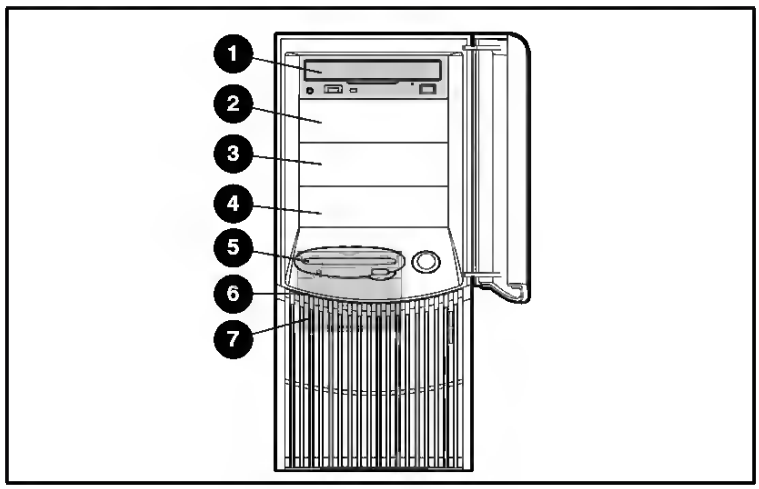

Figure 1-2. Identifying drive positions

Table 1-1
Drive Bay Components and Dimensions

Item	Component	Dimension
❶	CD-ROM drive	5.25 inch x 1.6 inch IDE CD-ROM drive bay
❷	Removable media bay	5.25 inch x 1.6 inch available removable media drive bay
❸	Removable media bay	5.25 inch x 1.6 inch available removable media drive bay
❹	Removable media bay	5.25 inch x 1.6 inch available removable media drive bay
❺	Diskette drive	3.5 inch x 1 inch 1.44-MB diskette drive bay
❻	Hard drive bay	3.5 inch x 1 inch hard drive bay
❼	Hard drive	3.5 inch x 1 inch hard drive bay

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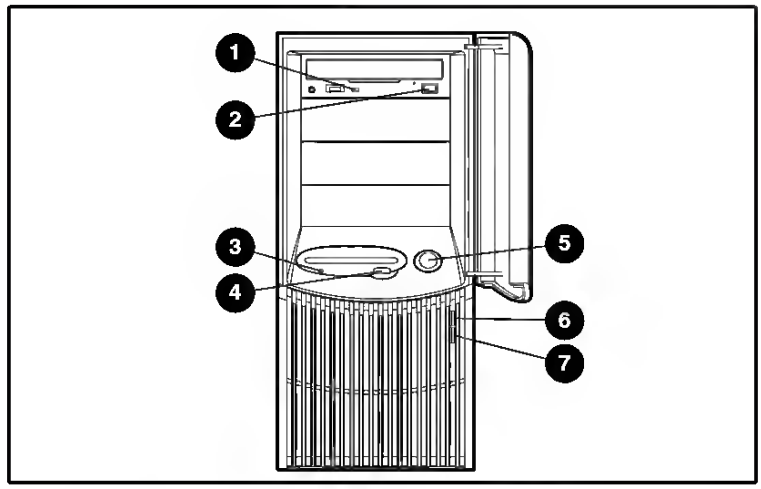

Figure 1-3. Front panel components

Table 1-2
Front Panel Components

Item	Component	Item	Component
❶	CD-ROM drive activity LED	❺	Power button
❷	CD-ROM drive eject button	❻	Power LED
❸	Diskette drive activity LED	❼	Hard drive activity LED
❹	Diskette drive eject button		

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Rear Panel Connectors

Figure 1-4 and Table 1-3 show the connectors on the rear panel of the ProLiant ML330.

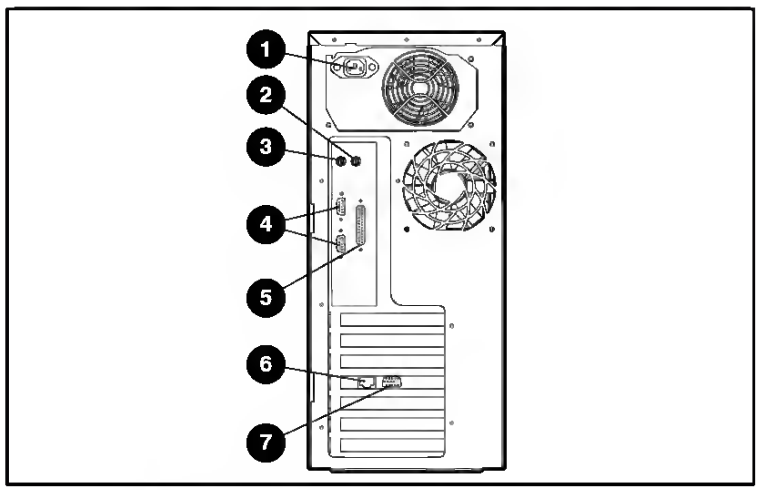

Figure 1-4. Identifying rear panel connectors

Table 1-3
Rear Panel Connectors

Item	Connector	Item	Connector
❶	Power cord	❺	Parallel port
❷	Mouse	❻	RJ-45 Ethernet for NIC
❸	Keyboard	❼	Video
❹	Serial port		

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System Board Components

Figure 1-5 and Table 1-4 show the components and connectors on the ProLiant ML330 system board.

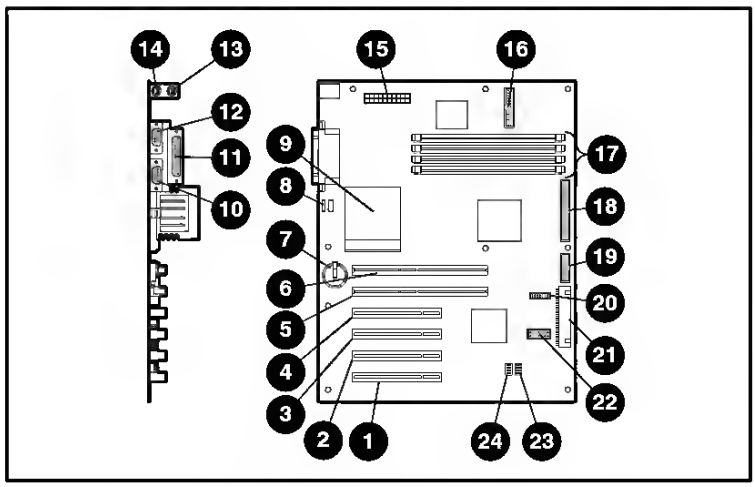

Figure 1-5. Identifying system board components

Table 1-4
System Board Components

Item	Component	Item	Component	Item	Component
❶	32-bit PCI slot 6	❾	Processor	⓱	DIMM slots (four)
❷	32-bit PCI slot 5	❿	Serial port connector B	⓲	Primary IDE connector
❸	32-bit PCI slot 4	⓫	Parallel port connector	⓳	Power button connector
❹	32-bit PCI slot 3 (Server Feature Board)	⓬	Serial port connector A	⓴	Server Management Information Connector (SMIC)
❺	64-bit PCI slot 2	⓭	Mouse connector	㉑	Secondary IDE connector
❻	64-bit PCI slot 1 (half-length)	⓮	Keyboard connector	㉒	Remote Insight Board connector
❼	Battery	⓯	Power supply connector	㉓	System configuration switch (SW2)
❽	System fan connector	⓰	Diskette drive connector	㉔	Processor speed switch (SW1)

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Processors and System Memory

- Pentium III processor with integrated 256-KB Cache Single Processor capability
- ECC for memory error detection and correction
- 64-MB, PC133-MHz ECC registered SDRAM DIMM system memory, expandable to 2 GB
- Support for 64-MB, 128-MB, 256-MB, or 512-MB, PC133-MHz ECC registered SDRAM DIMMs
- Supports up to four registered SDRAM DIMMs (PC133-MHz ECC), installed one at a time in any order

Expansion Slots

- Six expansion slots (five available): four 32-bit PCI slots (three available) and two 64-bit PCI slots
- PCI bus provides peripheral transactions at a bus clock speed of 33 MHz

Disk Controller

- Integrated Single-Channel Ultra2 SCSI Controller on the PCI local bus. The controller provides an internal SCSI bus.
- Optional controller boards for controller duplexing or expanding storage capacity are available.

Network Controller

- Integrated PCI 10/100 Wake-On-LAN NIC

Ports/Connectors

- Serial (2)
- Parallel
- Keyboard
- Mouse

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BIOS

- ROMPaq Utility for BIOS firmware upgrade
- BIOS Setup Utility for system configuration

Server Feature Board Components

Figure 1-6 and Table 1-5 show the components on the ProLiant ML330 Server Feature Board.

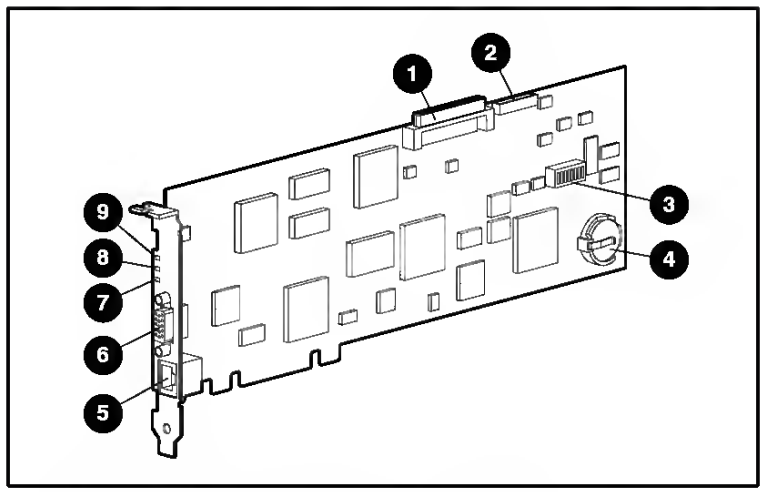

Figure 1-6. Identifying Server Feature Board components

Table 1-5
Server Feature Board Components

Item	Component	Item	Component
❶	SCSI channel connector	❻	Video connector
❷	Server Management Information Connector (SMIC)	❼	Network speed indicator
❸	Server Feature Board configuration switch	❽	Network link status indicator
❹	Replaceable lithium battery (CR2032)	❾	Network activity indicator
❺	RJ-45 Ethernet connector for NIC		

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Interfaces

- Integrated Single Channel Wide-Ultra2 SCSI Controller
- Integrated PCI 10/100 Wake-On-LAN NIC

Video

- Integrated ATI Rage XL Video Controller providing maximum resolution of 1600 x 1200 noninterlaced at 65 K colors
- Supports SVGA, VGA, and EGA graphics resolution
- 4-MB SDRAM video memory

Power Supply

- CE Mark compliant power supply

Warranty

- Refer to the Limited Warranty Statement included with your server

Server Configuration and Management

The ProLiant ML330 offers an extensive set of features and optional tools to support effective server management and configuration, including:

- BIOS Setup Utility
- Compaq SmartStart and Support Software
- Compaq Insight Manager
- Diagnostic Tools (POST, DIAGS, ASR)

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BIOS Setup Utility

The BIOS Setup Utility (or **F10** setup) performs a wide range of configuration activities, including the following:

- Viewing system information
- Selecting the operating system
- Configuring system devices and installed options
- Selecting the primary boot controller
- Managing storage options
- Backing up and restoring saved configurations
- ROMPaq utilities to upgrade flash BIOS

Compaq SmartStart and Support Software

SmartStart, located on the SmartStart and Support Software CD, is the intelligent way to set up your Compaq server. SmartStart includes:

- Driver updates
- Assisted operating system installations

For information concerning SmartStart, refer to the Server Setup and Management pack included in the shipping box.

Compaq Insight Manager

Compaq Insight Manager, which is loaded from the Compaq Management CD, is an easy-to-use software utility for collecting server information. Compaq Insight Manager performs the following functions:

- Forwards server alerts and fault conditions
- Monitors fault conditions and server performance
- Controls server security and configuration
- Remotely controls server
- Initiates rapid recovery services

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Diagnostic Tools

The software and firmware diagnostic tools available for your use include:

- Power-On Self-Test (POST)
- Diagnostics (DIAGS)
- Automatic Server Recovery (ASR)

Security Features

Security features include:

- Setup Password
- Power-on Password
- Diskette Drive Control
- Diskette Write Control
- Diskette Boot Override
- CD Boot Override
- Intruder Alert

Most security features are established through the Compaq BIOS Setup Utility. For information concerning server security features, refer to the SmartStart and Support Software CD included in the shipping box.

A hardware-associated security feature is the intruder alert. An intruder alert message will display if the front bezel has been unlatched or removed.

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Chapter 2

Overview of Server Installation

The following instructions are provided as an overview for first-time installation of your ProLiant ML330. If you have any problems, contact your Compaq authorized reseller.

WARNING: To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Disconnect power from the server by unplugging the power cord from either the electrical outlet or the server.
- Do not place anything on power cords or cables. Arrange them so that no one may accidentally step on or trip over them. Do not pull on a cord or cable. When unplugging from the electrical outlet, grasp the cord by the plug.

CAUTION: Electrostatic discharge can damage electronic components. Be sure you are properly grounded (earthed) before beginning any installation procedure. See Appendix B, "Electrostatic Discharge," for more information.

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Selecting a Site

Make sure that the installation area you select has the following features:

- Sturdy, level installation site that includes dedicated and properly grounded circuits, air conditioning, and static electricity protection
- 7.6-cm (3-in) clearance on all sides of server for proper ventilation
- Separate electrical circuit for the server

CAUTION: Protect the server from power fluctuations and temporary interruptions with a regulating uninterruptible power supply (UPS). This device protects the hardware from damage caused by power surges and voltage spikes and keeps the system in operation during a power failure.

Unpacking the Server

Unpack the server, keyboard, and cables according to the instructions and illustrations printed on the Quick Start Poster.

Locating Materials

Locate the following materials that were shipped with your ProLiant ML330:

- Keyboard
- Mouse
- Power cord
- Documentation label inside the server (most of the option installation and setup instructions are located on the label, which is attached to the inside of the access panel). See Chapter 3, "Hardware Options Installation" for instructions on removing the access panel.
- Documentation and software packs inside the shipping box

In addition to these supplied items, you may need:

- Torx T-15 screwdriver
- Phillips screwdriver
- Options or peripherals, such as expansion boards, monitors, uninterruptible power supply (UPS), memory, or drives
- Application software

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Connecting the Power Cord and Peripheral Devices

After all internal hardware options have been installed in the server, connect the power cord and peripheral devices to the connectors located on the rear panel of the server as indicated in Figure 2-1 and Table 2-1. See Chapter 3, "Hardware Options Installation," or see the options kits for detailed instructions.

WARNING: To reduce the risk of electrical shock or fire, do not plug telecommunications/telephone connectors into the network interface controller (NIC) receptacle.

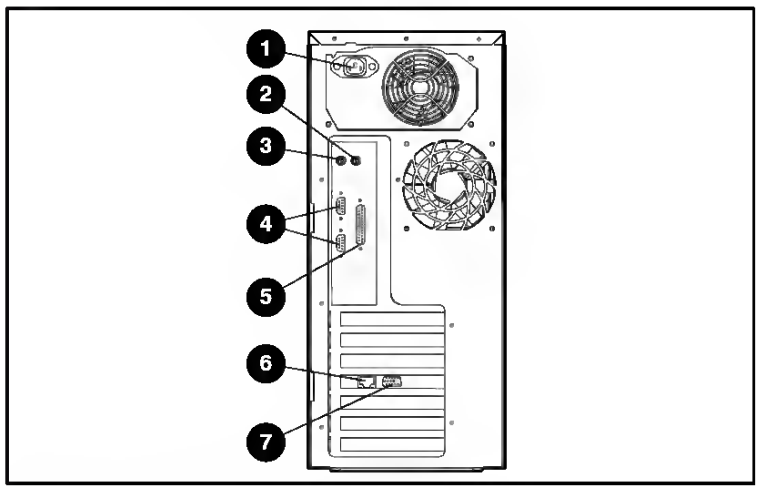

Figure 2-1. Identifying rear panel connectors

Table 2-1
Rear Panel Connectors

Item	Connector	Item	Connector
❶	Power cord connector	❺	Parallel port connector
❷	Mouse connector	❻	RJ-45 Ethernet connector for NIC
❸	Keyboard connector	❼	Video connector
❹	Serial port connectors		

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Installation Sequence

CAUTION: If your server has a factory-installed operating system, configure it using the instructions in the following section. Otherwise, follow the instructions in the "Operating System Purchased Separately" section later in this chapter.

Preconfigured Operating System

If you ordered your server with the factory-installed operating system, everything required to install your operating system is already on the server. Refer to the steps provided in the *Compaq Factory-Installed Operating System Software User Guide*.

CAUTION: Use the SmartStart and Support Software CD as recovery software only. Starting the server from the SmartStart and Support Software CD reconfigures the system and causes all data on the server to be lost.

To install your server:

WARNING: To reduce the risk of electric shock or damage to the equipment

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
- Disconnect power from the server by unplugging the power cord from either the electrical outlet or the server.
- Do not place anything on power cords or cables. Arrange them so that no one may accidentally step on or trip over them. Do not pull on a cord or cable. When unplugging from the electrical outlet, grasp the cord by the plug.

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1. After the cables have been connected to the server, you are ready to power up the ProLiant ML330. To power up your server:

   a. Press and release the circular indentation ❶ on the left side of the drive bay door to release the door latch.

   b. Swing the drive bay door ❷ open.

   c. Press the center of the power button ❸ on the front of the server.

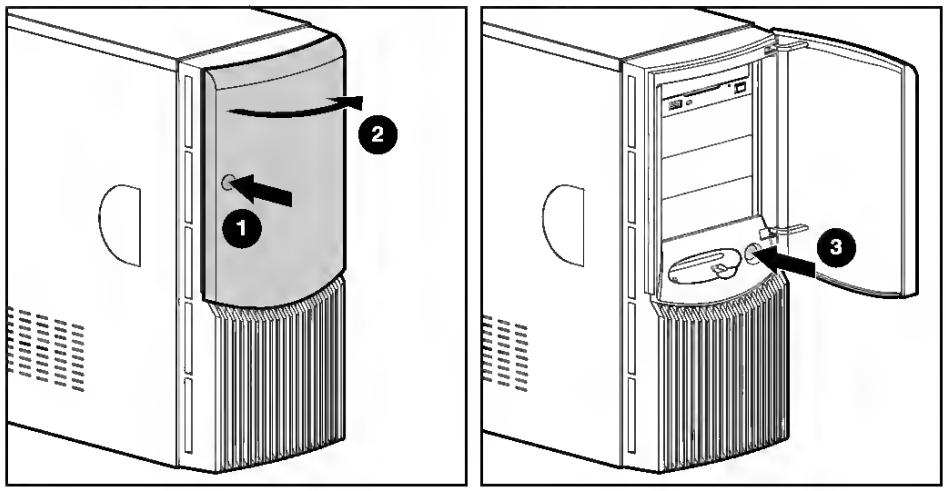

Figure 2-2. Powering up the server

2. Follow the screen instructions to complete the factory-installed operating system process.

3. Refer to Chapter 5, "Server Configuration and Utilities," and the Compaq Management CD for information about installing the Compaq Management Agents for your operating system.

4. After verifying your server configuration, back up your system configuration. Refer to SmartStart and Support Software CD for further information on backing up your system configuration.

5. Install any application software.

If you need to install additional options not preinstalled on your server, follow the steps in Chapter 3.

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Operating System Purchased Separately

If you purchased your operating system (OS) separately, you must install it using the SmartStart and Support Software CD. Refer to the Server Setup and Management pack for instructions on using SmartStart. The first time the server is configured, the SmartStart program automatically creates a necessary partition on your hard drive. This partition cannot be used for any other purpose and is not a traditional system partition.

Follow this sequence when installing your operating system for the first time:

CAUTION: Use the SmartStart and Support Software CD as recovery software only. Starting the server from the SmartStart and Support Software CD reconfigures the system and causes all data on the server to be lost.

IMPORTANT: To reduce the risk of damage to your server, complete the installation process by following the detailed procedures provided later in this chapter and in other sections of the setup and installation guide.

1. Review all guidelines listed from the beginning of this chapter through Step 1 of the "Preconfigured Operating System" section.
2. Run the BIOS Setup Utility by pressing **F10** (when prompted) to select the type of operating system and set the date and time. For more information on the BIOS Setup Utility, see Chapter 5, "Server Configuration and Utilities."
3. Install the SmartStart and Support Software CD. For SmartStart and Support Software CD initialization procedures, refer to the Server Setup and Management pack shipped with your server or see Chapter 5, "Server Configuration and Utilities."
4. Install Compaq Insight Manager to manage the server. For Compaq Management CD initialization procedures, refer to the Server Setup and Management pack shipped with your server.
5. Register your server. For server registration information, refer to the Server Setup and Management pack shipped with your server or register your Compaq server online at http://www.compaq.com/register. Send us your name, server serial number, and operating system (OS) information. You may also use your SmartStart Server Profile Diskette to register after configuring your server with SmartStart. Simply follow the instructions on our website and insert the SmartStart Server Profile Diskette when prompted.

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Configuring the Server

The BIOS Setup Utility can be used to configure the server and options. To invoke the setup utility, press the **F10** key when prompted during the startup process.

The SmartStart and Support Software CD contains the ROMPaq and updated drivers, and assists with the operating system installation. To use the SmartStart and Support Software CD:

1. Locate the SmartStart and Support Software CD in the Server Setup and Management pack.
2. With your server powered up, press the CD-ROM drive eject button.
3. Insert the SmartStart and Support Software CD in the CD-ROM drive with the labeled side up. Handle the CD by its edges, not by the flat surfaces of the disc.

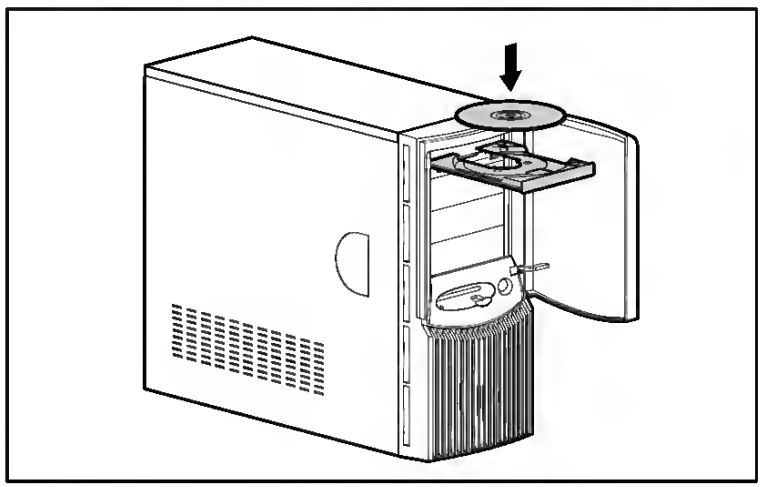

Figure 2-3. Inserting the CD

4. When the busy indicator turns green, the SmartStart sequence begins. Refer to the SmartStart and Support Software CD for more information.

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Chapter 3

Hardware Options Installation

This chapter provides procedures for installing, removing, and replacing hardware options on the ProLiant ML330.

CAUTION: Electrostatic discharge can damage electronic components. Be sure you are properly grounded before beginning any installation procedure.

NOTE: As a security measure, an intruder alert message will display at startup if the front bezel has been unlatched.

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Shutting Down the Server

Before installing or removing options, prepare your server by following these steps:

CAUTION: Failure to follow these directions could result in damage to equipment or loss of information.

1. Back up your server data and record configuration information.
2. Shut down the operating system, as directed in your operating system instructions.
3. Power down the server by pressing the power button on the front of the server.

IMPORTANT: To completely remove all power from the ML330, you must disconnect the power cord. The front panel power button may not completely shut down power to the server.

4. Remove the power cord.

WARNING: To reduce the risk of injury from electrical shock or damage to the equipment when installing an upgrade, make sure that the power to the server is turned off. Remove all AC power cords to completely disconnect power from the system.

5. Disconnect any other external equipment connections to the server.

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Removing the Front Bezel

To remove the front bezel:

> **CAUTION:** Before removing the front bezel, make sure that the server is powered down, all cables are disconnected from the back of the server, and the power cord is disconnected from the grounded (earthed) AC outlet.

1. Follow the steps in "Shutting Down the Server" earlier in this chapter.
2. Push up on the latch at the bottom of the front bezel ❶.
3. Swing the front bezel ❷ upward and slide it out and away from the chassis.

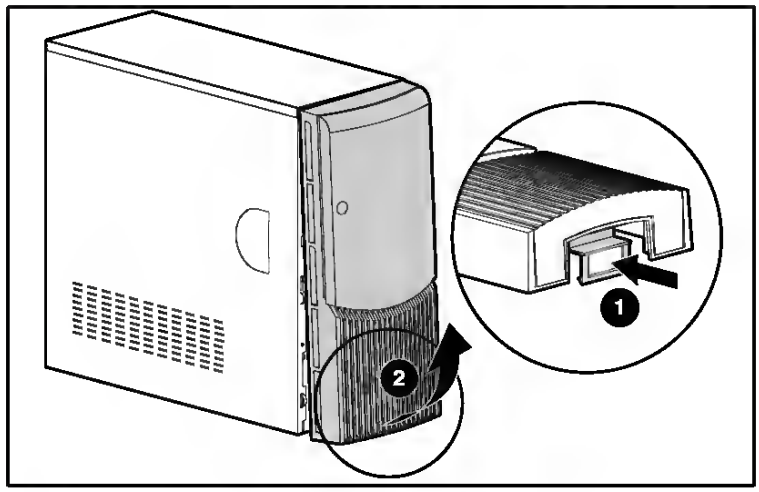

Figure 3-1. Removing the front bezel

To replace the front bezel, reverse the above procedure.

> **NOTE:** When replacing the front bezel, make sure the top hinge points are properly placed in the chassis before rotating the front bezel back into its original position.

> **NOTE:** As a security measure, an intruder alert message will display at startup if the front bezel has been unlatched.

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Removing the Access Panel

To remove the access panel:

WARNING: To reduce the risk of personal injury from hot surfaces, allow the internal system components to cool before touching.

CAUTION: Before removing the access panel, make sure that the server is powered down, all cables are disconnected from the back of the server, and the power cord is disconnected from the grounded (earthed) AC outlet.

CAUTION: Do not operate the server with the access panel removed. This panel is an integral part of the cooling system and removing it while the system is running may adversely affect data integrity.

1. Remove front bezel. See "Removing the Front Bezel" earlier in this chapter.
2. Remove the screw ❶ located on the left side of the front chassis.
3. Slide the access panel ❷ forward, pull from the top of the access panel, then lift the panel from the chassis.

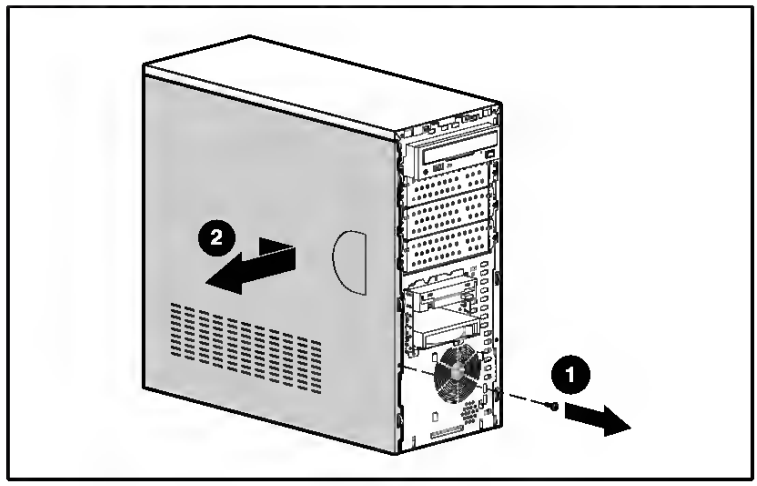

Figure 3-2. Removing the access panel

NOTE: Turn the access panel over to locate the System Configuration Label. This label provides information about the system board on your ProLiant ML330.

To replace the access panel, reverse the above procedure.

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Removing the Bezel Blanks

To remove a bezel blank from the front bezel:

> **CAUTION:** Before removing the front bezel, make sure that the server is powered down, all cables are disconnected from the server, and the power cord is disconnected from the grounded AC.

1. Remove front bezel. See "Removing the Front Bezel" earlier in this chapter.
2. On the back side of the front bezel, pinch the tabs ❶ on either end of the bezel blank toward each other, then push the bezel blank ❷ through the front bezel.

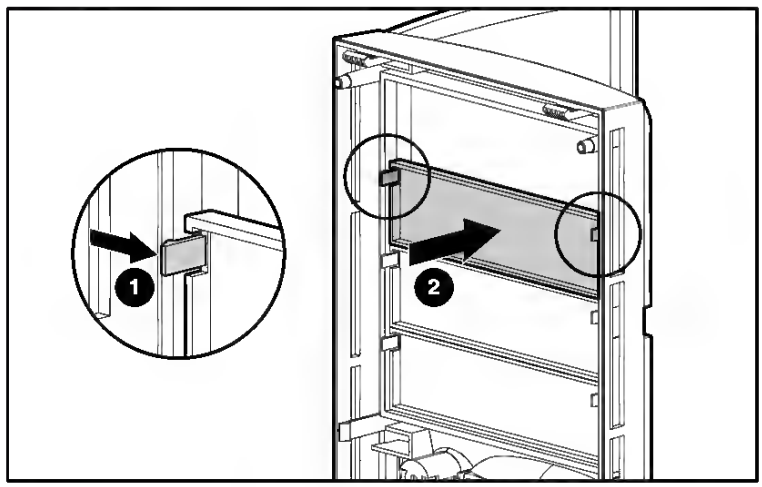

Figure 3-3. Removing a bezel blank

To replace a bezel blank, reverse the above procedure.

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Removing a Drive Tray

NOTE: The drive trays in the removable media bays may be used to mount internal 3.5-inch hard drives. The rails mounted inside the drive trays may be removed, and used to mount other devices in the removable media bays.

To remove a drive tray from a removable media bay:

CAUTION: Before removing the access panel, make sure that the server is powered down, all cables are disconnected from the back of the server and the power cord is disconnected from the grounded (earthed) AC outlet.

1. Follow the steps in "Removing the Access Panel" earlier in this chapter.
2. Remove the screws on either side of the drive tray.
3. Gently slide the drive tray out of the front of the chassis.

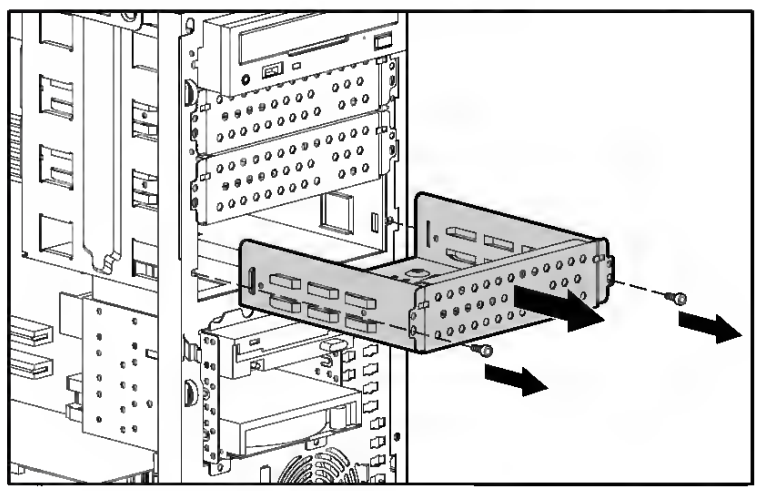

Figure 3-4. Removing the drive tray

To replace a drive tray, reverse the above procedure.

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Storage Devices

This section discusses removal and replacement procedures for the storage devices supported on the ProLiant ML330.

Drive Positions

The ProLiant ML330 supports a maximum of seven internal drive bays. Figure 3-5 and Table 3-1 show the drive configuration.

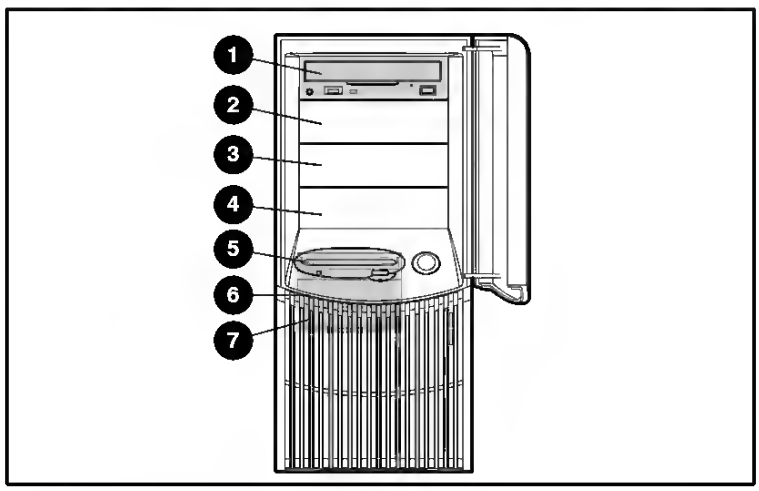

Figure 3-5. Identifying drive positions

Table 3-1
Drive Bay Dimensions

Item	Dimension	Item	Dimension
❶	5.25 x 1.6 inch IDE CD-ROM drive bay	❺	3.5 x 1 inch 1.44-MB diskette drive bay
❷	5.25 x 1.6 inch available removable media drive bay	❻	3.5 x 1 inch hard drive bay
❸	5.25 x 1.6 inch available removable media drive bay	❼	3.5 x 1 inch hard drive bay
❹	5.25 x 1.6 inch available removable media drive bay		

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Installing a Hard Drive

To install a 3.5-inch hard drive:

> **CAUTION:** Before removing the front bezel, make sure that the server is powered down, all cables are disconnected from the server, and the power cord is disconnected from the grounded AC.

1. Follow the steps in "Removing the Access Panel" earlier in this chapter.
2. Disconnect the power and data cables from the back of all devices in the hard drive compartment.
3. Remove the three shipping screws ❶, press the tabs ❷ on either side of the drive compartment, then pull the drive compartment ❸ from the chassis.

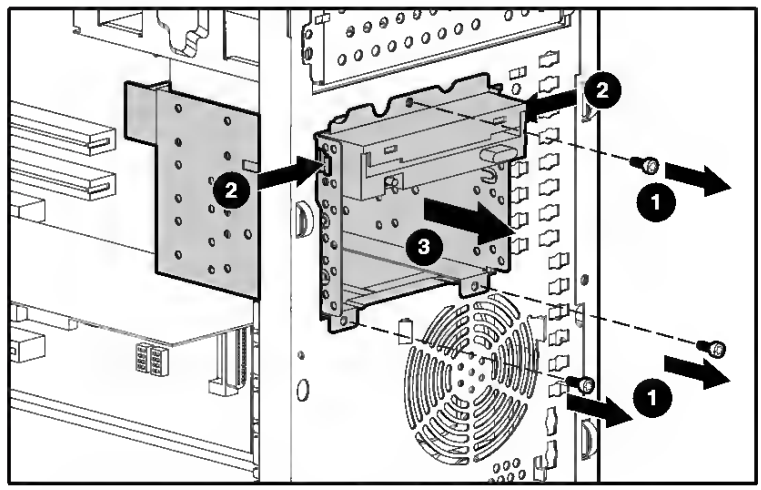

Figure 3-6. Removing the drive compartment

4. To configure the device, set the SCSI ID. You must manually set the SCSI ID on each device to a unique value in the range of 0 to 6 for each SCSI bus. Refer to the documentation provided with the device for instructions on how to set the SCSI ID.
5. Remove all terminating jumpers from third-party SCSI devices. (Compaq SCSI cables are terminated.)

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6. Slide the drive ❶ into the drive bay, then secure with two screws ❷ on either side of the drive compartment.

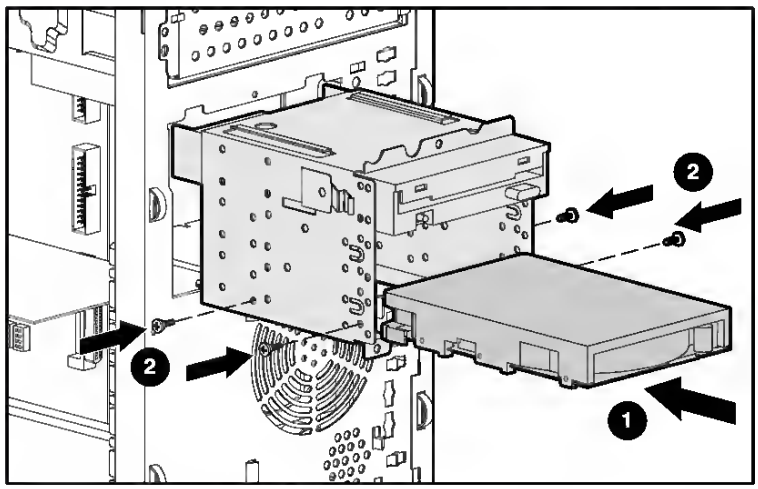

Figure 3-7. Installing a 3.5-inch hard drive

7. Slide the drive compartment back into the chassis.
8. Connect the power and data cables to the back of all devices.

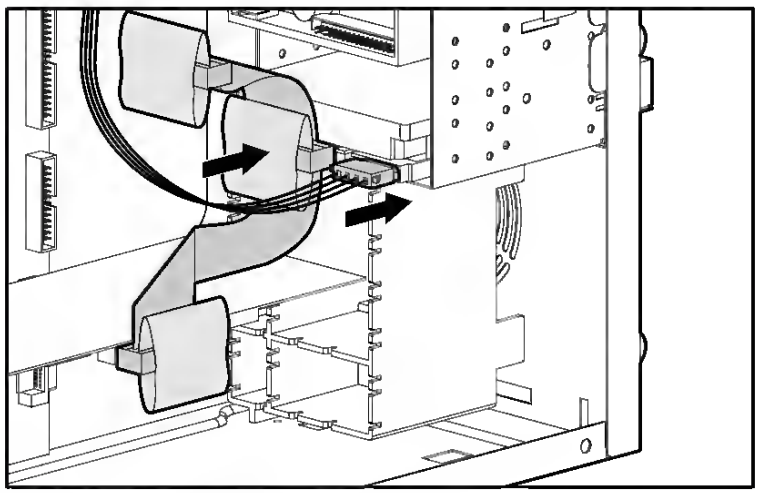

Figure 3-8. Connecting the hard drive cables

9. Replace the access panel and the front bezel.
10. Restore power to the server.

NOTE: Using a non-Ultra2 drive impacts SCSI bus performance.

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Removing a Hard Drive

To remove a 3.5-inch hard drive:

> **CAUTION:** Before removing the access panel, make sure that the server is powered down, all cables are disconnected from the server, and the power cord is disconnected from the grounded AC.

1. Follow the steps in "Removing the Access Panel" earlier in this chapter.
2. Disconnect the power and data cables from the back of all devices in the hard drive compartment.

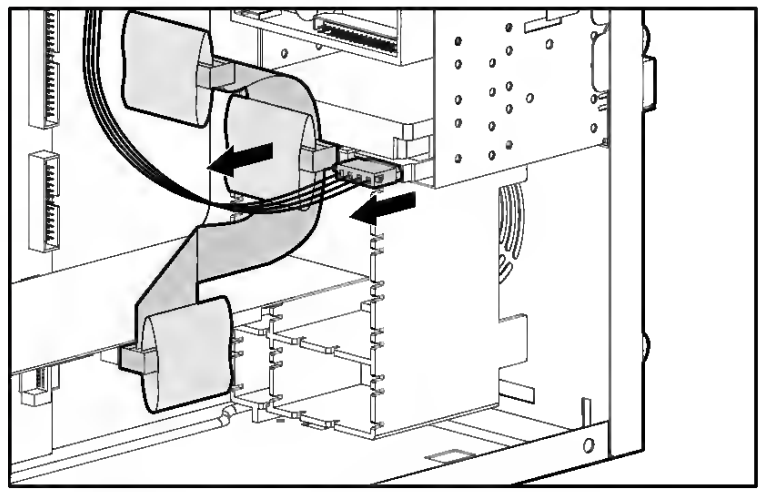

Figure 3-9. Disconnecting the hard drive cables

3. Remove the three shipping screws, press the tabs on either side of the drive compartment, then pull the drive compartment from the chassis as shown in Figure 3-6.

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4. Remove two screws ❶ on either side of the drive to be removed, then gently pull the drive ❷ out of the drive bay.

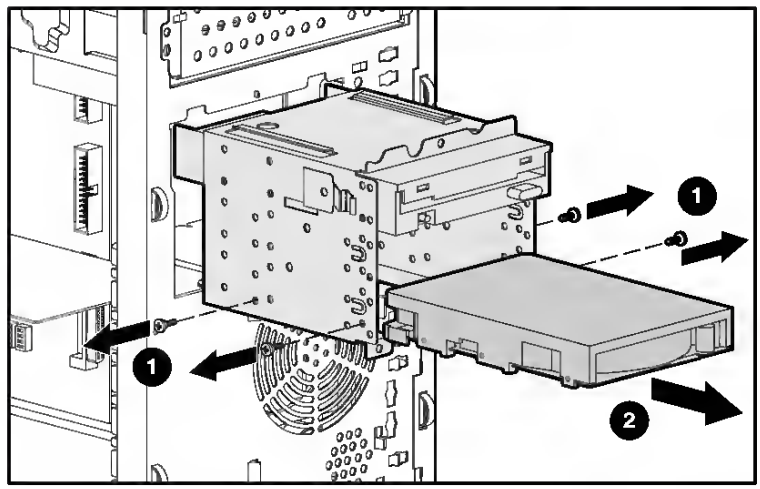

Figure 3-10. Removing a hard drive

5. Slide the drive compartment back into the chassis.
6. Connect the power and data cables to the back of all devices.
7. Replace the access panel and the front bezel.
8. Restore power to the server.

Installing a Hard Drive in a Removable Media Bay

IMPORTANT: If you are installing a hard drive into a removable media drive bay, you must use a drive tray. This drive tray can be found in the removable media bay. See "Removing a Drive Tray" earlier in this chapter.

To install a hard drive using a drive tray:

CAUTION: Before removing the access panel, make sure that the server is powered down, all cables are disconnected from the server, and the power cord is disconnected from the grounded AC.

1. Follow the steps in "Removing the Access Panel" and "Removing a Drive Tray" earlier this chapter.

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2. Set the drive ❶ into the drive tray.
3. Tighten the screws ❷ on the bottom of the drive tray to secure the drive into the drive tray.

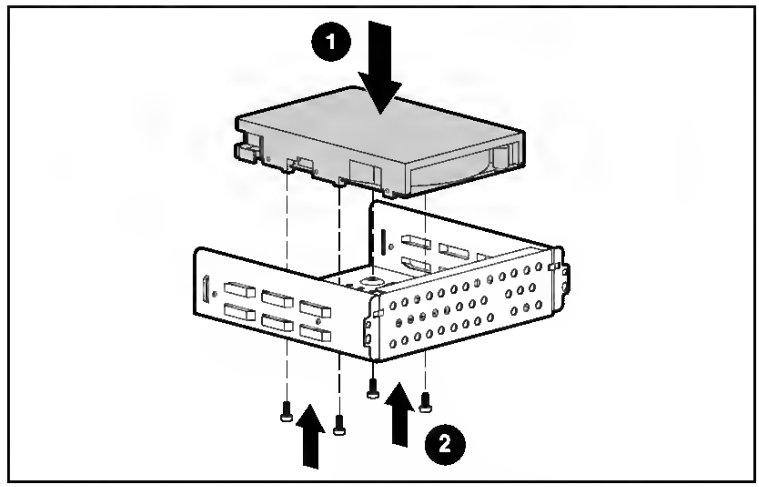

Figure 3-11. Installing a hard drive into removable media bay drive tray

4. Slide the drive tray into the removable media bay, then secure with a screw on either side of the bezel blank.
5. Connect the data and power cables to the back of all devices.

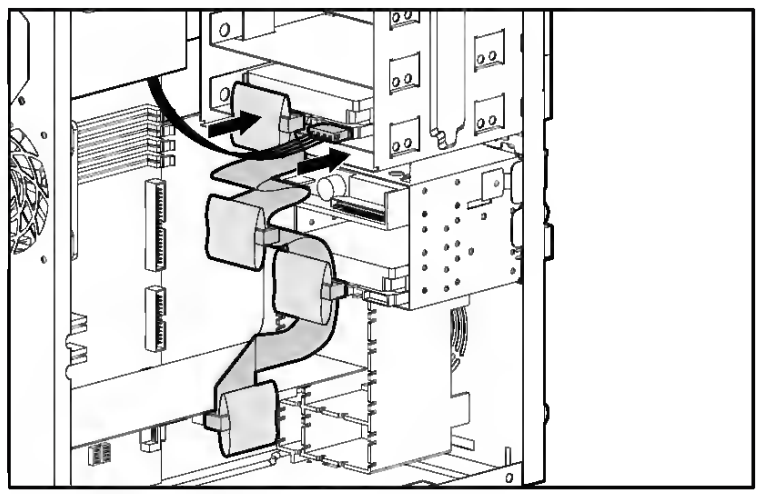

Figure 3-12. Connecting the drive cables

6. Replace the access panel and the front bezel.
7. Restore power to the server.

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Installing a Tape Drive or Other Device in a Removable Media Bay

All ProLiant ML330 models ship standard with four removable media bays. The top 5.25-inch bay is occupied with an IDE CD-ROM drive. The remaining three 5.25-inch bays are available for removable media devices. You can install three half-height or one full-height and one half-height devices in these bays.

To install a 5.25-inch device:

CAUTION: Before removing the access panel, make sure that the server is powered down, all cables are disconnected from the server, and the power cord is disconnected from the grounded AC.

1. Follow the steps in "Removing the Access Panel" and "Removing the Bezel Blanks" at the beginning of this chapter.
2. To configure the device, set the SCSI device ID. You must manually set the SCSI device ID on each device to a unique value in the range of 0 to 6 for each SCSI bus. Refer to the documentation provided with the drive for instructions on how to set the SCSI device ID.
3. Remove all terminating jumpers from third-party SCSI devices. (Compaq SCSI cables are terminated.)
4. Slide the device ❶ into the drive bay, then secure with screws ❷ on either side of the device.

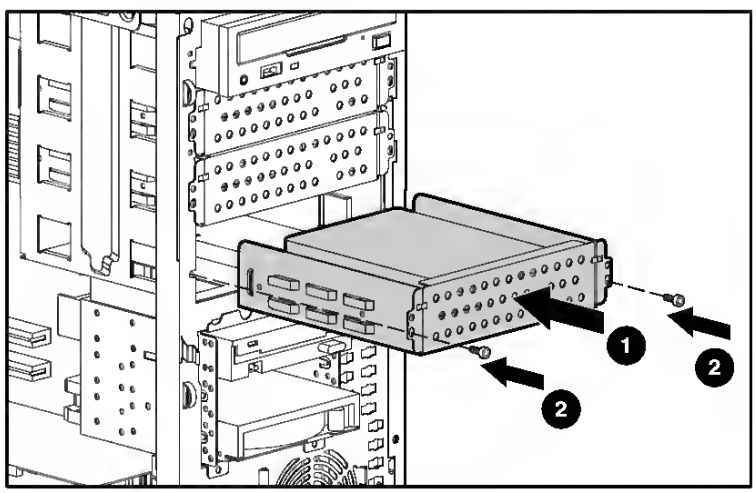

Figure 3-13. Installing a device in a 5.25-inch drive bay.

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5. Connect the data and power cables to the back of the device, as shown in Figure 3-12.
6. Replace the access panel and the front bezel. Restore power to the server.

To install a tape drive:

CAUTION: Before removing the access panel, make sure that the server is powered down, all cables are disconnected from the server, and the power cord is disconnected from the grounded AC.

IMPORTANT: When installing a removable media device, remove the rails included in the drive tray and install the rails on the device, replacing any existing rails on the device. The rails are attached to the drive tray with two screws on each rail.

1. Follow the steps in "Removing the Access Panel" and "Removing the Bezel Blanks" at the beginning of this chapter.
2. To configure the device, set the SCSI device ID. You must manually set the SCSI device ID on each device to a unique value in the range of 0 to 6 for each SCSI bus. Refer to the documentation provided with the drive for instructions on how to set the SCSI device ID.

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3. Slide the drive into the drive bay, then tighten the screws on either side of the device.

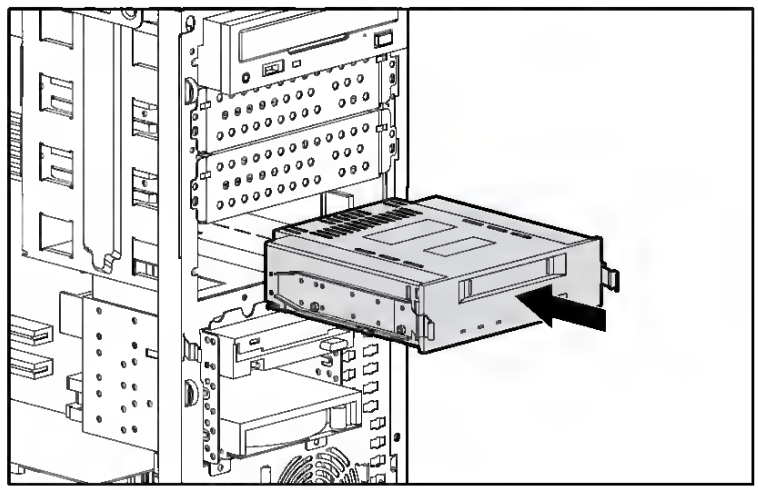

Figure 3-14. Installing a tape drive

4. Connect the data and power cables to the back of the drive, as shown in Figure 3-12.
5. Remove the two bezel blanks in the front bezel in front of the tape drive. See "Removing the Bezel Blanks" earlier in this chapter.
6. Replace the access panel and the front bezel.
7. Restore power to the server.

Removing a Tape Drive or Other Device from the Removable Media Bay

To remove a tape drive or other device:

> **CAUTION:** Before removing the access panel, make sure that the server is powered down, all cables are disconnected from the server, and the power cord is disconnected from the grounded AC.

1. Follow the steps in "Removing the Access Panel" at the beginning of this chapter.

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2. Disconnect the power and data cables from the back of the device.

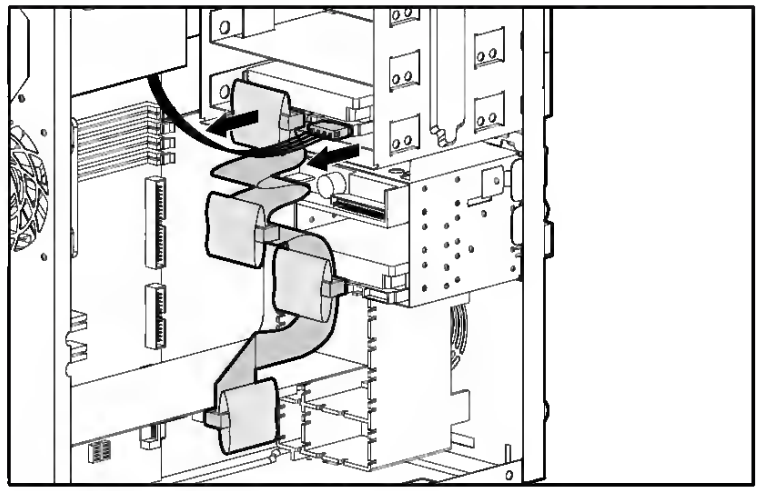

Figure 3-15. Disconnecting the cables

3. Remove the screws ❶ on either side of the device.

4. Gently slide the device ❷ out from the front of the chassis.

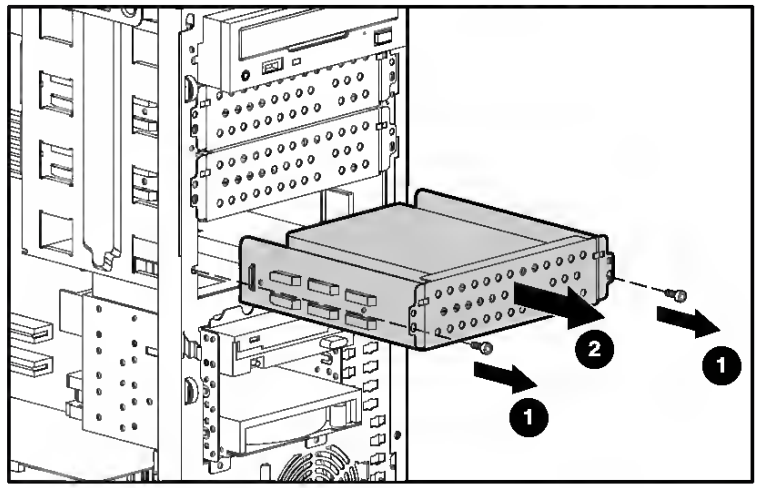

Figure 3-16. Removing a device from the removable media bay

5. Install another device or a drive tray. Replace the bezel blank(s). See "Removing the Bezel Blanks" and "Removing a Drive Tray" earlier in this chapter.

6. Replace the access panel and the front bezel. Restore power to the server.

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Expansion Slots

Figure 3-17 and Table 3-2 identify the location of expansion slots.

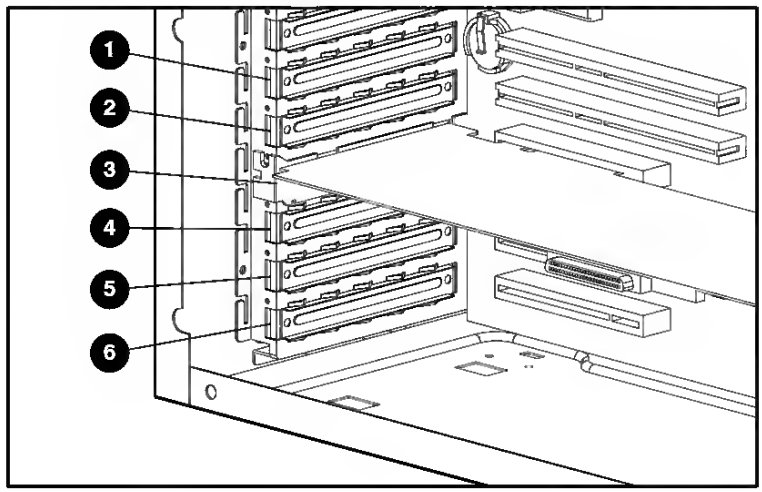

Figure 3-17. Locating expansion slots

Table 3-2
Expansion Slots

Item	Slot Type	Slot Number
❶	64-bit PCI (half-length)	1
❷	64-bit PCI	2
❸	32-bit PCI (Server Feature Board)	3
❹	32-bit PCI	4
❺	32-bit PCI	5
❻	32-bit PCI	6

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Installing an Expansion Board

To install an expansion board:

CAUTION: Before removing the access panel, make sure that the server is powered down, all cables are disconnected from the back of the server, and the power cord is disconnected from the grounded AC outlet.

CAUTION: To prevent damage to the system when handling components, see Appendix B, "Electrostatic Discharge."

1. Follow the steps in "Removing the Access Panel" earlier in this chapter.
2. From inside the chassis, push the expansion slot cover through the rear of the chassis.

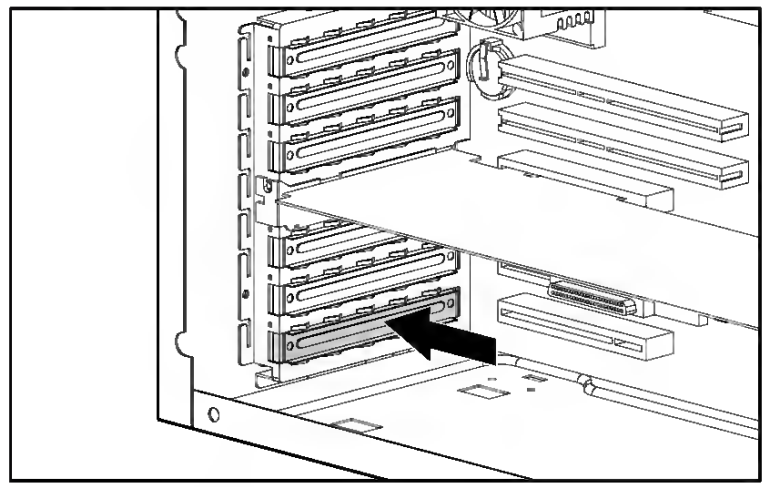

Figure 3-18. Removing expansion slot cover

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3. Insert the expansion board into the slot and secure with a screw on the top of the board.

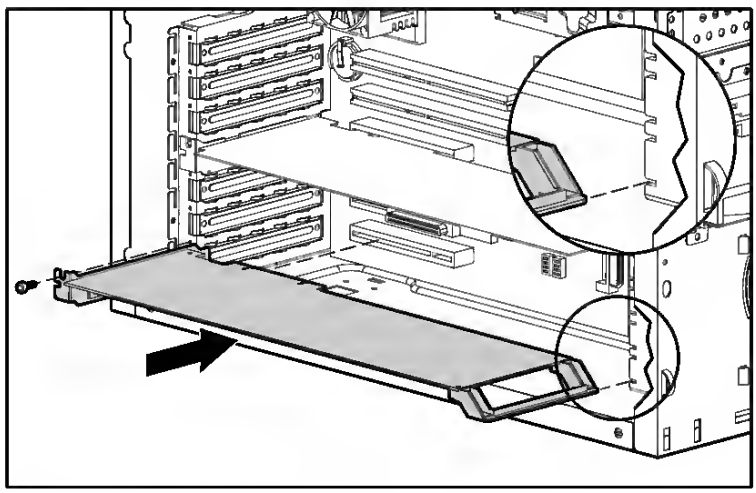

Figure 3-19. Installing an expansion board

4. Connect any cables to the expansion board.

To remove an expansion board, reverse the above procedure.

Configuring PCI Devices

Interrupt sharing between PCI devices may occur in certain configurations. The BIOS is designed to optimally configure the system. However, interrupt conflicts may occur between PCI devices.

NOTE: Interrupt sharing does not present a problem for like devices, such as two network interface controllers.

BIOS Setup Utility

NOTE: Interrupt settings can be reset at any time by running the BIOS Setup Utility, and choosing "Set Defaults and Exit."

The BIOS Setup Utility allows you to view and change the interrupt(s) assigned to each device. However, you may notice that changing the interrupt of one device changes another device interrupt.

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Memory Modules

Technical Information and Important Guidelines for DIMM Installation

CAUTION: Before removing the access panel, make sure that the server is powered down, all cables are disconnected from the back of the server, and the power cord is disconnected from the grounded AC outlet.

CAUTION: To prevent damage to the system when handling components, see Appendix B, "Electrostatic Discharge."

CAUTION: When handling a memory module, be careful not to touch any of the contacts. Doing so may damage the module.

When installing DIMMs, you must follow these guidelines:

- Use only 64-MB, 128-MB, 256-MB, or 512-MB registered PC133-MHz ECC SDRAM DIMMs.
- DIMMs must be industry-standard, 168-pin, PC133-MHz registered SDRAM DIMMs. The SDRAM DIMMs must support CAS Latency 3 (CL=3).
- Do not mix ECC and non-ECC SDRAM DIMMs. If different types of DIMMs are mixed, the system does not function properly.

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Installing a Memory Module

The ProLiant ML330 supports PC133-MHz registered ECC SDRAM DIMMs. Additional DIMMs (64-MB, 128-MB, 256-MB, or 512-MB) are available to upgrade the memory. The server has four DIMM slots located on the system board.

DIMMs do not need to be installed in pairs and can be installed in any available slot.

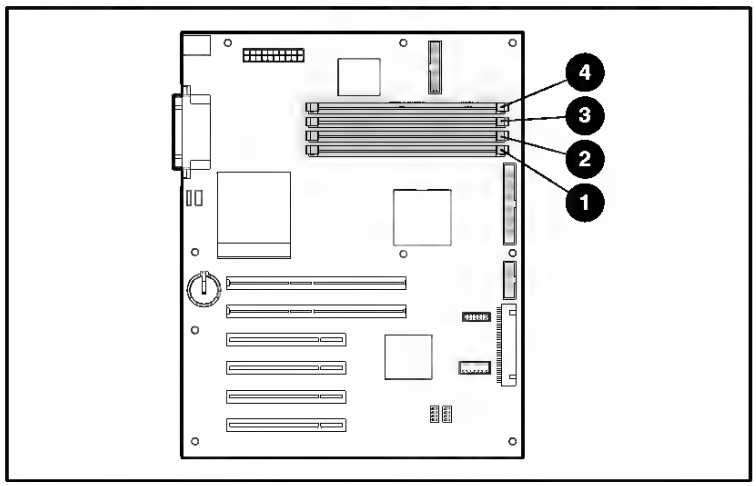

Figure 3-20. Locating DIMM slots

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To install a DIMM:

1. Follow the steps in "Removing the Access Panel" at the beginning of this chapter.
2. Press outward on both latches ❶ of the DIMM slot at the same time.
3. Insert the DIMM ❷ into the slot.

CAUTION: A DIMM can be installed one way only. Be sure to match the two key slots on the DIMM with the tab on the DIMM slot. Push the DIMM down into the DIMM slot, ensuring that it is fully inserted and properly seated.

4. Return latches ❸ to the upright position.

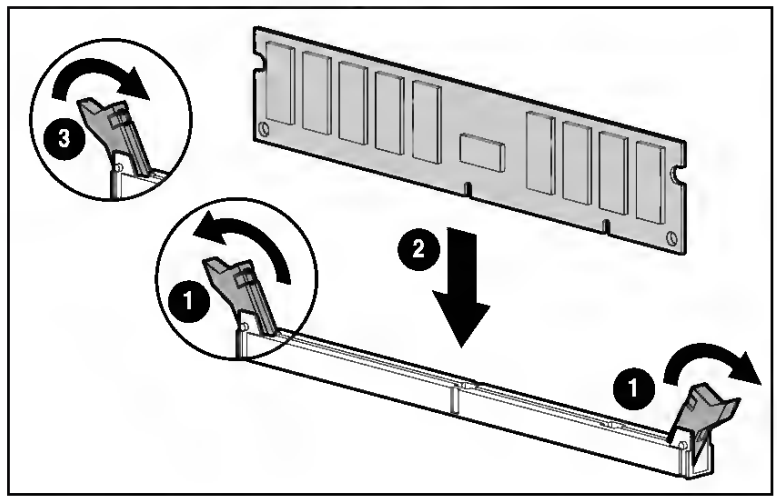

Figure 3-21. Installing a DIMM

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Removing a Memory Module

To remove a DIMM:

1. Follow the steps in "Removing the Access Panel" at the beginning of this chapter.
2. Press outward on both latches ❶ of the DIMM slot at the same time. This releases the DIMM and pushes it partially out of the slot.
3. Lift the DIMM ❷ from the slot.

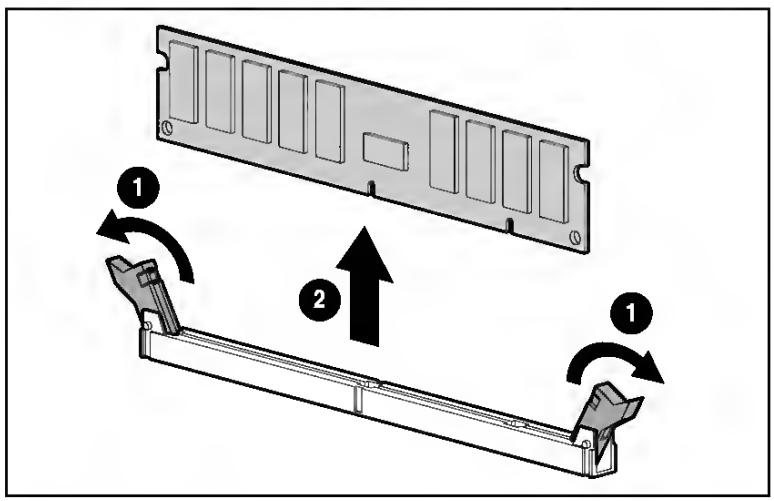

Figure 3-22. Removing a DIMM

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Replacing the Battery

The ProLiant ML330 has nonvolatile memory, which requires a battery to retain system information. There is a battery on the system board and a battery on the Server Feature Board. These batteries are required to maintain certain system data.

IMPORTANT: Refer to Regulatory Compliance Notices in Appendix A for battery disposal information.

Replacing the System Board Battery

If your server no longer automatically displays the correct date and time, you may need to replace the battery that provides power to the real-time clock. When replacing a battery, use a CR2032 3-volt lithium coin cell battery.

After you have completed the battery installation, run the BIOS Setup Utility to reconfigure your system.

WARNING: The system board contains a lithium battery. There is a risk of fire and chemical burn if the battery is handled improperly. Do not disassemble, crush, puncture, short external contacts, dispose of in water or fire, or expose it to temperatures higher than 60°C (140°F).

To replace the lithium battery:

CAUTION: Before removing the access panel, make sure that the server is powered down, all cables are disconnected from the back of the server, and the power cord is disconnected from the grounded AC outlet.

CAUTION: Static electricity can damage electronic components of the server. Before beginning these procedures, be sure you are discharged of static electricity by briefly touching a grounded metal object.

1. Follow the steps in "Removing the Access Panel" at the beginning of this chapter.
2. Locate the battery on the system board. See Figure 3-23 for the location of the battery ❶.

NOTE: If you have expansion boards installed, you may need to remove them in order to gain access to the battery.

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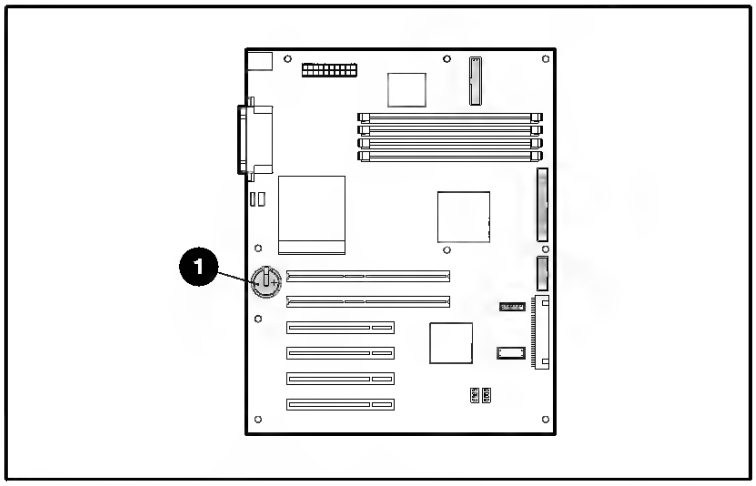

Figure 3-23. Locating the battery on the system board

3. Slide the battery ❶ out of the holder. Lift the battery ❷ away from the holder.

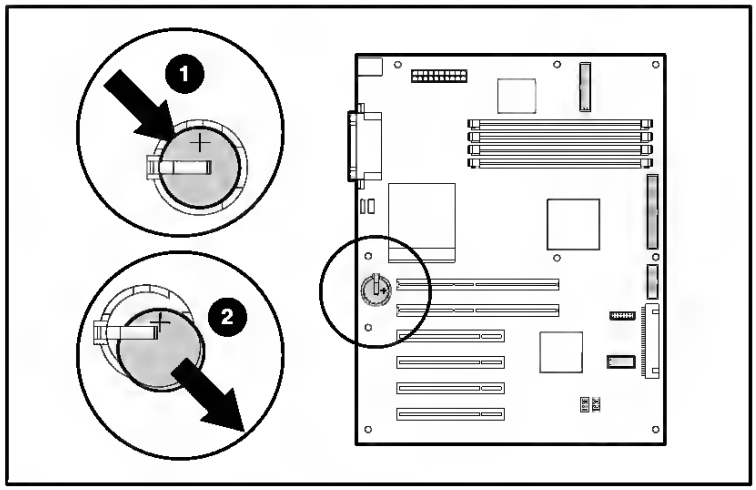

Figure 3-24. Removing the battery from the system board

4. Slide the replacement battery into the proper position with the positive (+) side up.

IMPORTANT: Positive polarity should be positioned up.

5. Run the BIOS Setup Utility to reconfigure your system.

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Replacing the Server Feature Board Battery

WARNING: The Server Feature Board contains a lithium battery. There is a risk of fire and chemical burn if the battery is handled improperly. Do not disassemble, crush, puncture, short external contacts, dispose of in water or fire, or expose it to temperatures higher than 60°C (140°F).

CAUTION: Before removing the access panel, make sure that the server is powered down, all cables are disconnected from the back of the server, and the power cord is disconnected from the grounded AC outlet.

CAUTION: Static electricity can damage electronic components of the server. Before beginning these procedures, be sure you are discharged of static electricity by briefly touching a grounded metal object.

To install the new battery:

1. Follow the steps in "Removing the Access Panel" at the beginning of the chapter.
2. Remove the Server Feature Board from expansion slot 3. See "Expansion Slots" earlier in this chapter.

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3. Slide the battery out of the holder, and then lift the battery away from the holder.
4. Slide the replacement battery in the proper position with the positive (+) side up.

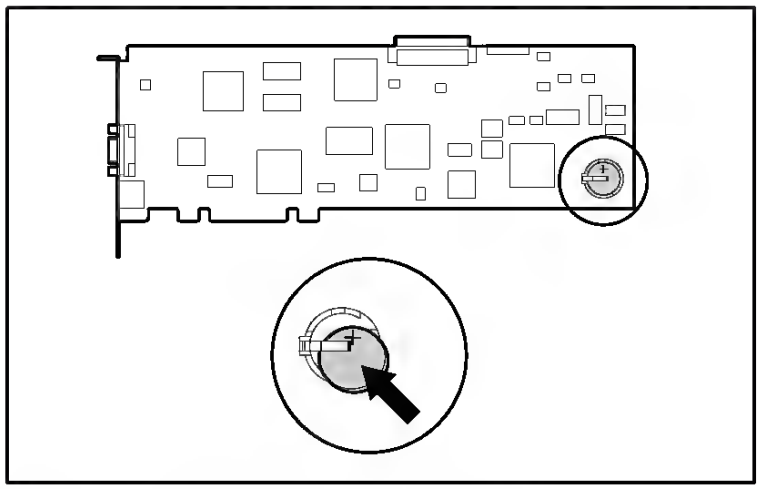

Figure 3-25. Replacing the Server Feature Board battery

5. Replace the Server Feature Board in expansion slot 3. See "Installing an Expansion Board" earlier in this chapter.
6. Replace the server access panel and connect cables to the server.
7. Run the BIOS Setup Utility to reconfigure your system.

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Chapter 4

Cabling Guidelines

Storage Device Installation Guidelines

This chapter provides an overview of the cabling that resides in the system chassis. It also includes information on how to cable SCSI, IDE, and removable media devices in the system, as well as information about all critical system cabling.

Consider the following guidelines when adding SCSI devices:

- As a general rule, a maximum of seven devices may be added per channel. Your server is equipped with one Wide-Ultra2 SCSI channel.
- Be sure to remove all terminating jumpers from third-party SCSI devices.

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Identifying the Internal SCSI Components

The SCSI cable shown in Figure 4-1 is included with your server.

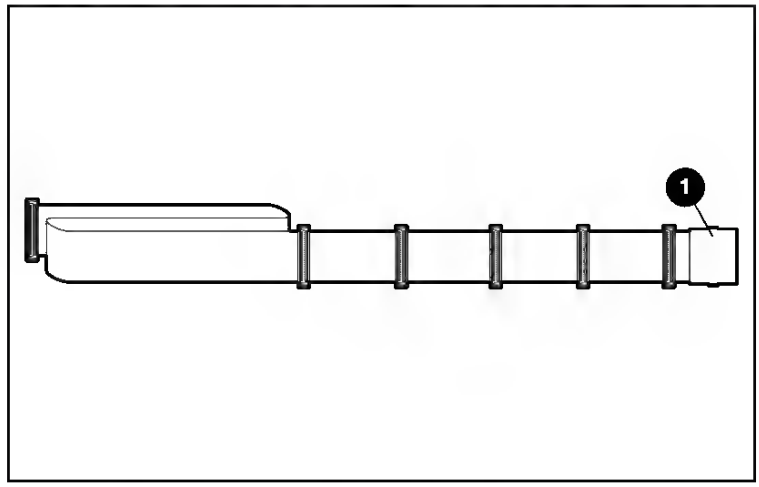

Figure 4-1. Identifying the SCSI cable with terminator ❶

The SCSI cable shown in this illustration supports up to five SCSI devices and comes with a terminator on the end.

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Before cabling the server, note the removable media and hard drive compartment locations as shown in Figure 4-2 and Table 4-1. For additional information about installing optional SCSI devices, refer to the documentation included with the SCSI devices.

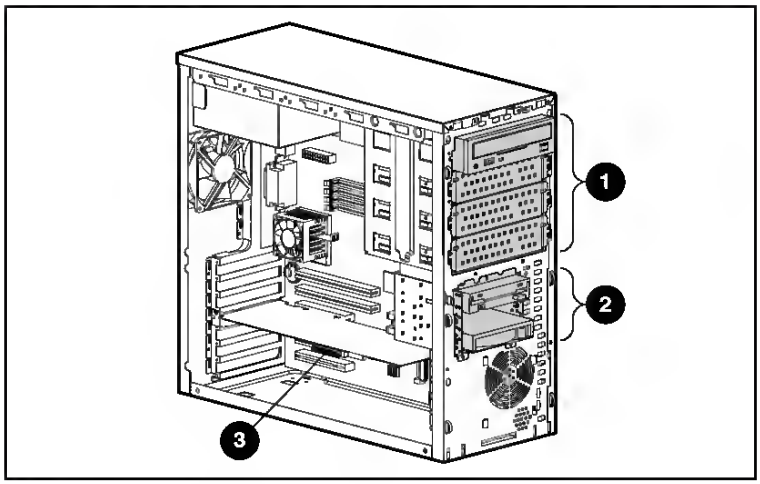

Figure 4-2. Internal SCSI components

Table 4-1
Internal SCSI Components

Number	Description
❶	Removable media bay area
❷	Hard drive bay area
❸	SCSI connector

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Identifying and Connecting a Fast SCSI-2 Device (Narrow)

Some SCSI devices require a special adapter, which is not standard with your server, to connect with the SCSI cable included with your server.

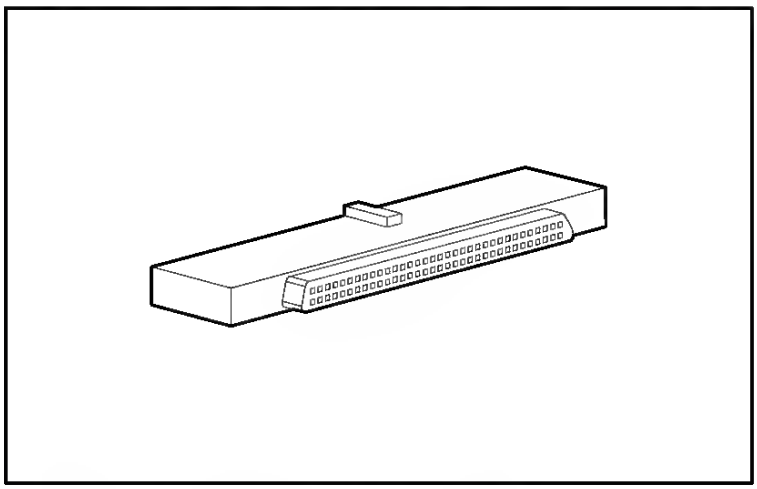

Figure 4-3. 68-to-50 pin (wide-to-narrow) SCSI adapter

If you are installing a device that uses a Fast SCSI-2 interface, you must use a 68-to-50 pin SCSI adapter (part number 199618-001), shown in Figure 4-3. This adapter should be installed between the 50-pin interface on the device and the 68-pin SCSI cable attached to the SCSI connector on the Server Feature Board.

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Connecting an Integrated Wide-Ultra2 SCSI Controller to an Internal SCSI Hard Drive or Other SCSI Device

The following steps detail the procedure for connecting cables from an integrated Wide-Ultra2 SCSI controller to an internal SCSI hard drive or other device:

1. Follow the steps in the sections following "Installation and Removal Guidelines for SCSI Hard Drives" or "Installing a Tape Drive or Other Device in a Removable Media Bay" in Chapter 3.
2. Make sure the SCSI ID is uniquely set for each device.
3. Locate the Wide-Ultra2 SCSI cable attached to the SCSI connector.
4. Install the next available connector to the hard drive or SCSI device.
5. Install the next available power connector to the hard drive or SCSI device.

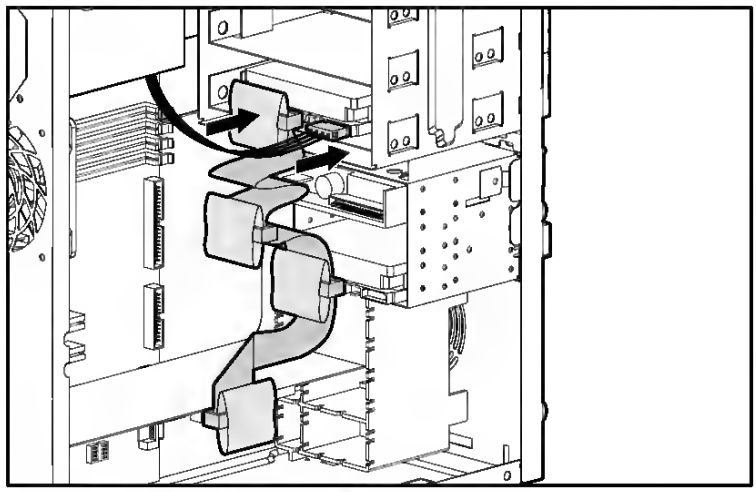

Figure 4-4. Cabling an integrated Wide-Ultra2 SCSI controller to a hard drive or other device

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Connecting Internal Hard Drives to Smart Array Controllers

Many configurations are possible when adding multiple SCSI controllers. This section outlines the cabling procedure for the Smart Array Controller. Refer to the Smart Array Controller options documentation for further information.

The following steps outline the installation procedure for the Smart Array Controller:

1. Follow the steps in sections "Installation and Removal Guidelines for SCSI Hard Drives" and "Expansion Slots" of Chapter 3.
2. Locate the Wide-Ultra2 SCSI cable attached to the Server Feature Board SCSI connector.
3. Remove the cable from the SCSI connector.

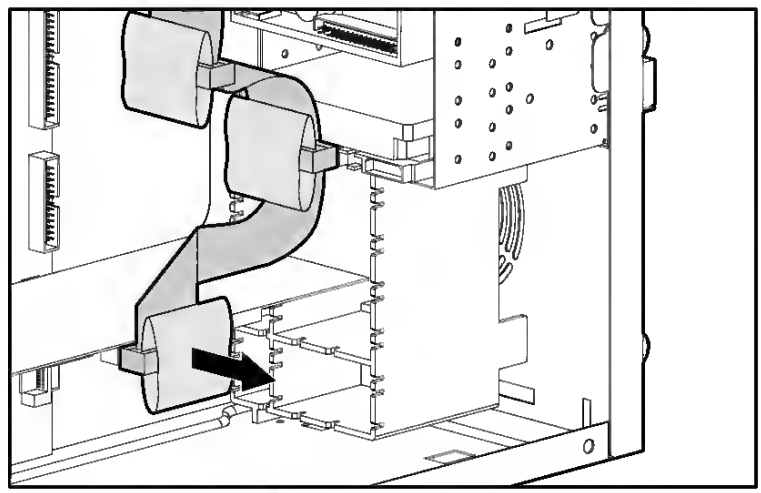

Figure 4-5. Removing the Wide-Ultra2 SCSI cable from the Server Feature Board

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4. Reconnect the Wide-Ultra2 SCSI cable to the Smart Array Controller.

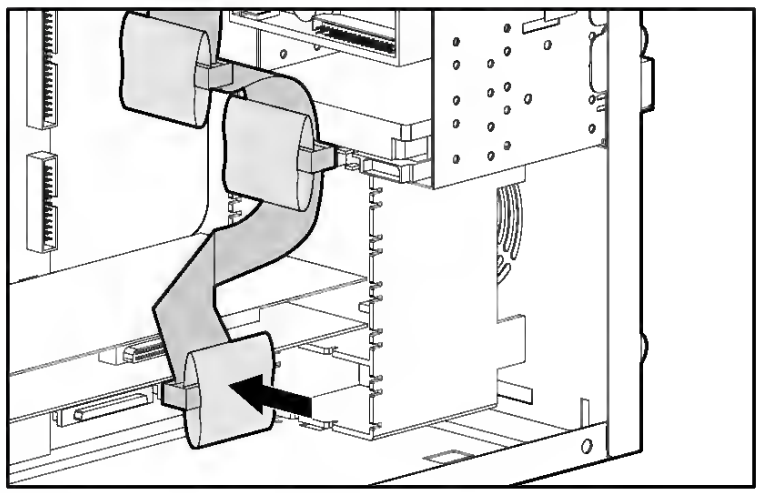

Figure 4-6. Connecting the Wide-Ultra2 SCSI cable to the Smart Array Controller

NOTE: The SCSI connector on the Server Feature Board is self-terminating. If you choose not to use the SCSI connector, you do not need to install a terminated cable.

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Connecting the Server Management Information Cable (SMIC)

The Server Management Information Cable (SMIC) provides system critical management information to the operating system. Proper SMIC connections help avoid potential system failure and BIOS error messages. Figure 4-7 illustrates the proper SMIC connection between the system board and the Server Feature Board.

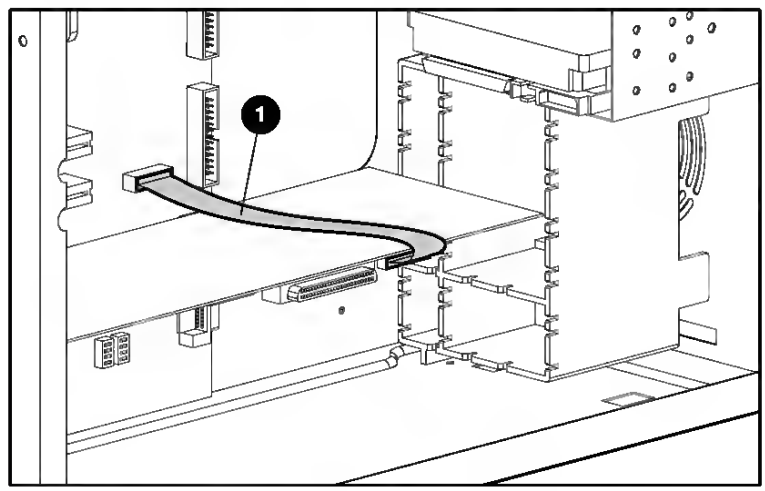

Figure 4-7. Connecting the Server Management Information Cable ❶

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Chapter 5

Server Configuration and Utilities

This chapter provides information about the utilities and tools provided with the ProLiant ML330. The following tools and utilities are described in this chapter:

- BIOS Setup Utility
- ROMPaq
- SmartStart
- Compaq Insight Manager
- SmartStart Diskette Builder
- Compaq Survey Utility
- Compaq Diagnostics Utility
- Automatic Server Recovery (ASR)

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BIOS Setup Utility

The BIOS Setup Utility performs a wide range of configuration activities including the following:

- Viewing system information
- Selecting the operating system
- Configuring system devices and installed options
- Selecting the primary boot controller
- Managing storage options
- Backing up and restoring saved configurations

In addition, the BIOS Setup Utility includes other features, which are outlined in "Using the BIOS Setup Utility."

Navigating the BIOS Setup Utility

To make selections within the BIOS Setup Utility, use the following keys:

- The **Arrow** keys navigate through the menu system
- The **Tab** key navigates through individual fields on the screen
- Selections are made by pressing the **Enter** key
- Selections are cancelled by pressing the **Escape** key
- Selections and changes are saved by pressing the **F10** key

Using the BIOS Setup Utility

NOTE: Most of the features in the BIOS Setup Utility are not required in the setup of your server. The options in this utility are designed to assist with specific server configuration issues.

The BIOS Setup Utility is separated into a series of menu selections designed to configure specific areas of the system. The primary menus are the File, System, Storage, and Advanced menus.

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The File Menu

The File menu is used for saving and restoring configurations, and exiting the utility. The following is a list of selections found in this menu with an explanation of each option:

Save to Floppy creates a backup image of the current system configuration on an unformatted 1.44-MB diskette in the diskette drive. This process is set up to archive current configuration settings and to overwrite any data previously saved on the diskette.

CAUTION: All data on the diskette is overwritten during this process.

Restore from Floppy reads a backup image of the current system configuration from a 1.44-MB diskette in the diskette drive and stores the configuration in the system. This can be used to restore the system to an archived configuration.

Set Defaults and Exit restores default configuration values for the system. This option can be used if the system has been incorrectly configured.

Ignore Changes and Exit terminates the setup utility without storing any changes that have been made during the current BIOS setup session.

Save Changes and Exit stores the current configuration selections.

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The System Menu

The System menu is used for overall system configuration settings. The following is a list of selections found in this menu with an explanation of each option:

System Information displays the current system configuration. This information can be used to identify current system components without opening the chassis. Items displayed include:

- Product name
- System type
- Processor(s) information
- Cache size
- System BIOS information
- System management information, including serial number and asset tracking information
- Memory and memory module information

Set Time and Date allows the user to set the system date and time.

Primary Operating System allows the selection of the operating system. This option automatically selects appropriate advanced settings for the operating system selected and should be set before the operating system installation.

Setup Password prevents unauthorized users from running the BIOS Setup Utility.

Power-on Password prevents the system from starting unless the specified password has been entered.

System IDs allows the user to alter management information settings. This management information is used by the administrator for tracking the system and includes the factory-programmed system serial number, user-assigned asset and ownership tags, and a factory-assigned universally unique system identifier (UUID) used by software.

Keyboard allows the user to select an international keyboard used with the system.

Processor Serial Number enables or disables the unique processor serial number feature of Intel Pentium III processors.

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The Storage Menu

The Storage menu is used to configure primary storage devices connected to the system. The following is a list of selections found in this menu with an explanation of each option:

Diskette Drives allows the selection of the type of diskette drive connected to the diskette drive controller in the system.

Boot Order enables the user to configure the order of devices used to start an operating system. This can be used to prevent the system from starting from diskette and CD and to select which device the system scans first.

Hard Drive Controller Order allows manual selection of the controller. When the system displays the "attempting to Boot from C:" message, the system searches the selected controller for an operating system. Whenever an additional storage adapter is added to the system, it is recommended that you use this selection to confirm that you are starting from the appropriate hard drive controller.

Advanced allows the user to configure and control removable media, as well as to control the use of the IDE controllers in the system devices. The following is a list of selections found in this menu:

- **Removable Media** allows you to select settings for removable media devices.
- **IDE Devices** allows you to observe devices connected to the primary and secondary IDE controllers in the system.
- **IDE Drive Timing** allows changes to the mechanism used for transferring data between various IDE devices connected to the system.
- **IDE Options** allows users to select whether IDE translations are enabled.

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The Advanced Menu

The Advanced menu is used to manually assign system resource assignments and disable some devices in the system in order to free resources for other devices in the system. The following is a list of selections found in this menu with an explanation of each option:

Power-On Self-Test (POST) allows you to set Quick Boot and POST messages. Quick Boot is a feature that speeds the POST processes once the system has been started correctly one time. POST messages can be disabled to cancel text displayed during the POST process.

Embedded Devices allows you to view and manually assign resources to embedded system devices, as well as to disable some embedded devices in order to free system resources. Disable and enable the primary and secondary IDE controller.

IMPORTANT: Compaq recommends that you do not disable the embedded SCSI controller. Doing so disables certain system management features.

PCI IRQ Configuration allows a manual interrupt request (IRQ) for a specific PCI device. The system automatically assigns IRQ settings for all PCI devices in the system.

Follow these guidelines when manually assigning IRQ for PCI devices in the system:

- If sharing is required, share interrupts between similar devices. It is generally safe to share IRQs between PCI devices. However, for certain operating systems, it is best to prevent dissimilar PCI devices (for instance, a storage controller and a network controller) from sharing the same IRQ.
- Use all available IRQs. Sharing IRQs can cause performance bottlenecks. To prevent these bottlenecks, assign PCI devices to unused IRQs, following the rules already listed.

NOTE: The latest operating systems from Microsoft, Novell, and SCO bypass the use of IRQs and use an advanced interrupt controller called the APIC. The APIC has been designed to address the issues associated with limited IRQs, multiprocessor systems, and shared interrupts. If you are using the latest operating system, you can let the system automatically configure interrupts for all devices in the system.

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IRQ Summary displays the list of all interrupts (IRQs) in the system, as well as the devices using the IRQs.

APIC Table allows users to manually assign the table that is generated for the operating system. By default, this selection is automatically set based upon the primary operating system. In the event that you have selected "Other" as the primary operating system, this menu allows manual override.

The mapped table is a configuration that represents the legacy IRQ assignments for all devices in the system. The full table is a configuration that represents the broadest interrupt assignments for devices in the system, minimizing interrupt sharing at the possible expense of compatibility with older operating systems.

Automatic Server Recovery enables and disables the ASR feature.

Wake Support enables and disables the wake support (PME), such as Wake On LAN

ROMPaq

Using Flash ROM in Compaq servers allows the firmware (BIOS) to be upgraded with system or option ROMPaq utilities. To upgrade the BIOS, insert a ROMPaq diskette into the diskette drive, then remove power from the system, and then power up the system again.

The ROMPaq Utility then checks the system and provides a choice (if more than one exists) of ROM revisions to which the system can be upgraded. This procedure is the same for both system and option ROMPaq utilities.

CAUTION: Do not power down during a firmware upgrade. A loss of power during upgrade may corrupt the firmware and prevent the system from starting.

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SmartStart

The SmartStart and Support Software CD is used to load the system software, thereby achieving a well-integrated server and ensuring maximum dependability and supportability. The SmartStart CD contains diagnostic utilities and ROMPaq tools.

NOTE: Do not use the SmartStart and Support Software CD for loading system software if you purchased your system with a factory-installed operating system. Refer to the *Compaq Factory-Installed Operating System Software User Guide*.

To install the SmartStart and Support Software CD, run **F10** setup (BIOS Setup Utility) and configure the primary operating system. Next, follow these steps:

1. With your server powered up, press the disk eject button to open the CD-ROM tray.
2. Locate the SmartStart and Support Software CD in the Server Setup and Management pack.
3. Insert the SmartStart and Support Software CD in the CD-ROM drive and restart the system.

   NOTE: Handle the CD by its edges, not by the flat surfaces of the disc.

4. When the busy indicator turns green, the SmartStart installation sequence begins.

   Refer to the SmartStart documentation included with your server to install the operating system, create updated driver diskettes, and run upgrade utilities.

Compaq Insight Manager

Compaq Insight Manager is the Compaq application for easily managing network devices. Compaq Insight Manager delivers intelligent monitoring and alerting as well as visual control of your Compaq devices. Documentation for Compaq Insight Manager is available on the Compaq Management CD in [CD-ROM DRIVE]:*OVERVIEW.HLP*.

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SmartStart Diskette Builder

The SmartStart and Support Software CD contains a utility to generate support diskettes in the event that they are needed or the software cannot be used directly from the SmartStart CD. Support diskettes are "punched-out" from data stored on the SmartStart CD. The support includes:

- Array Configuration Utility
- Operating System support
- Diagnostic utilities
- Server utilities
- Erase utility
- System and Option ROMPaq diskettes

To run the Diskette Builder, use a workstation running Windows 95, Windows 98, Windows NT, or Windows 2000. You will also need several 1.44-MB diskettes. All data on the diskettes will be overwritten. Insert the SmartStart and Support Software CD in the workstation drive. The CD automatically runs the Diskette Builder utility; however, if the system does not support the "auto-run" feature, use Windows Explorer to run [CD-ROM DRIVE]:\DSKBLDR\DSKBLDR.EXE.

Compaq Survey Utility

The Compaq Survey Utility is an online information gathering agent that runs on servers, collecting critical hardware and software information from various sources.

The Compaq Survey Utility outputs the information it gathers into *SURVEY.TXT*. This file is located in [Windows NT Drive]:\COMPAQ\SURVEY for Windows NT, and SYS:SYSTEM for NetWare. If a significant change occurs between data gathering intervals, the previous information is marked, and *SURVEY.TXT* is overwritten to reflect the latest configuration and changes. This file allows you to keep a historical record of change events for server hardware and software.

The Compaq Survey Utility automatically runs at startup and on specified time intervals. You can modify the data gathering interval by modifying the command line parameters.

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Installing Survey

Installing Survey with SmartStart Installation

To install the Compaq Survey Utility through the SmartStart Setup process, refer to the SmartStart Installation Poster. This method installs an operating system and Compaq products on a server. Do not use this method to add the Compaq Survey Utility to an existing system.

Installing Survey from Compaq Management CD

To install the Compaq Survey Utility from the Compaq Management CD on a Windows NT server, you must be logged on to the Windows NT server with administrator access rights. Once you are logged on, enter the following at the Windows NT command prompt:

```
[CD-ROM DRIVE]:\Survey\Win-NT\Eng\Survey -i -c
```

If the target server does not have a CD drive, use Diskette Builder to create Survey Utility diskettes.

To install the Compaq Survey Utility from the Compaq Management CD on a NetWare server, enter the following at the NetWare system prompt:

```
Load [CD-ROM DRIVE]:\Survey\Netware\Eng\Sinstall
```

Running Survey

Once the Compaq Survey Utility is installed, it gathers information by default every Wednesday at noon and at every power-up. You can change the Compaq Survey Utility data-gathering interval using command line parameters. You can also force a one-time, immediate collection.

If you want the Compaq Survey Utility to perform a one-time immediate collection on a Windows NT server, enter the following at the Windows NT command prompt: **Survey**

If you want the Compaq Survey Utility to perform a one-time immediate collection on a NetWare server you need to unload the utility, then reload it. Enter the following at the NetWare system prompt: **Unload Survey**

At the next NetWare system prompt, enter the following: **Load Survey**

You can also change the Compaq Survey Utility data-gathering interval using command line parameters.

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Compaq Diagnostics Utility

The Diagnostics Utility is accessed from diskette. A diskette can be created from the SmartStart CD. To run Diagnostics, insert the Diagnostics diskette and restart the server. The server powers up from the diskette and runs the Diagnostics Utility.

Automatic Server Recovery (ASR)

ASR is a feature in ProLiant servers that causes the system to restart in the event of a catastrophic OS error like a blue-screen, ABEND (abnormal end), or panic. A system failsafe timer, the ASR timer, is started when the Compaq System Management driver, also known as the health driver, is loaded. The timer is reset periodically during normal OS operation, but in the event of OS failure, the timer expires and restarts the server. ASR increases server up time by restarting the server within 10 minutes after a crash or system hang. The Compaq Insight Manager console notifies you in the event of a server ASR. You can disable ASR from the Compaq Insight Manager console.

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Appendix A

Regulatory Compliance Notices

Regulatory Compliance Identification Numbers

For the purpose of regulatory compliance certifications and identification, your server is assigned a Compaq series number. The Compaq series number for the ProLiant ML330 is Series ES1014. The series number can be found on the product label, along with the required approval markings and information. When requesting certification information for this product, always refer to this series number. This series number should not be confused with the marketing name or model number for your server.

Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (personal computers, for example). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

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The rating label on the device shows which class (A or B) the equipment falls into. Class B devices have an FCC logo or FCC ID on the label. Class A devices do not have an FCC logo or FCC ID on the label. Once the class of the device is determined, refer to the following corresponding statement.

Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user is required to correct the interference at personal expense.

Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause barmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

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Declaration of Conformity for Products Marked with the FCC Logo - United States Only

This device complies with Part 15 of the FCC Rules and is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding your product, contact:

Compaq Computer Corporation
P. O. Box 692000, Mail Stop 530113
Houston, Texas 77269-2000

Or, call

1-800-652-6672 (1-800-OK-COMPAQ). For continuous quality improvement, calls may be recorded or monitored.

For questions regarding this FCC declaration, contact:

Compaq Computer Corporation
P. O. Box 692000, Mail Stop 510101
Houston, Texas 77269-2000

Or, call

281-514-3333

To identify this product, refer to the Part, Series, or Model number found on the product.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Compaq Computer Corporation may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

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Mouse Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canadian Notice (Avis Canadien)

Class A Equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B Equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (in brackets are the equivalent international standards):

- EN55022 (CISPR 22) - Electromagnetic Interference
- EN50082-1 (IEC801-2, IEC801-3, IEC801-4) - Electromagnetic Immunity
- EN60950 (IEC950) - Product Safety

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Japanese Notice

ご使用になっている装置にVCCIマークが付いていましたら、次の説明文をお読み下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

VCCIマークが付いていない場合には、次の点にご注意下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です　この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Taiwanese Notice

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

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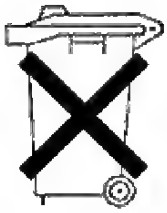
Battery Replacement Notice

Your computer is provided with a Lithium Manganese Dioxide battery. There is a danger of explosion and risk of personal injury if the battery is incorrectly replaced or mistreated. For more information about battery replacement or proper disposal, contact your Compaq authorized reseller or authorized service provider.

WARNING: Your computer contains an internal Lithium Manganese Dioxide battery. There is risk of fire and burns if the battery pack is not handled properly. To reduce the risk of personal injury:

- Do not attempt to recharge the battery.
- Do not expose to temperatures higher than 60°C.
- Do not disassemble, crush, puncture, short external contacts, or dispose of in fire or water.
- Replace only with the Compaq spare designated for this product.



Batteries, battery packs, and accumulators should not be disposed of together with the general household waste. To forward them to recycling or proper disposal, use the public collection system or return them to Compaq, your Compaq authorized service resellers or authorized service providers, or their agents.

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Laser Compliance

The CD-ROM drive contains a laser diode of gallium aluminum arsenide (GaAlAs) emitting in the wavelength range of 780 +/- 35 nm. All Compaq systems equipped with a laser device comply with safety standards, including International Electrotechnical Commission (IEC) 825. With specific regard to the laser, the equipment complies with laser product performance standards set by government agencies as a Class 1 laser product. The product does not emit hazardous laser radiation.

WARNING: Use of controls or adjustments or performance of procedures other than those specified herein or in the laser product's installation guide may result in hazardous radiation exposure. To reduce the risk of exposure to hazardous radiation:

- Do not try to open the unit enclosure. There are no user-serviceable components inside.
- Do not operate controls, make adjustments, or perform procedures to the laser device other than those specified herein.
- Allow only Compaq authorized service providers to repair the unit.

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured from August 1, 1976. Compliance is mandatory for products marketed in the United States.

This marking on the internal CD-ROM drive indicates that the product is classified as a CLASS 1 LASER PRODUCT.

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Power Cords

If you were not provided with a power cord for your computer, you should purchase a power cord that is approved for use in your country.

The power cord must be rated for the product and for the voltage and current marked on the product's electrical ratings label. The voltage and current rating of the cord should be greater than the voltage and current rating marked on the product. In addition, the diameter of the wire must be a minimum of 1.00 mm^2 or 18AWG, and the length of the cord must be between 1.8 m (6 feet) and 3.6 m (12 feet). If you have questions about the type of power cord to use, contact your Compaq authorized service provider.

A power cord should be routed so that it is not likely to be walked on or pinched by items placed upon it or against it. Particular attention should be paid to the plug, electrical outlet, and the point where the cord exits from the product.

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Appendix B

Electrostatic Discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

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Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ± 10 percent resistance in the ground cords. To provide proper grounding, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have a Compaq authorized reseller install the part.

NOTE: For more information on static electricity, or assistance with product installation, contact your Compaq authorized reseller.

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Appendix C

Switches and Jumpers

When you add or remove a component or change a security feature, you must reconfigure the server to recognize these changes. If the system configuration is incorrect, your server may not work properly and you may receive error messages on the screen. Setting the system board switches is part of the reconfiguration process, along with running the BIOS Setup Utility.

Switch Settings

The ProLiant ML330 system board has two switches that are used to set configuration and processor speed options on your server. The Server Feature Board has a switch, that is used to set configuration options on the Server Feature Board. Refer to the access panel labels, to the Quick Start Poster, or to the tables below for settings.

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System Board Switch Settings

The following tables define the function for each switch setting:

Table C-1
Processor Speed Switch Settings (SW1)

Switch	Function
1	Reserved
2	Reserved
3	Reserved
4	Reserved

Table C-2
System Configuration Switch Settings (SW2)

Switch	Function	Default Position
1	On = Clear Setup Password	Off
2	On = Clear Stored Configuration Data	Off
3	Reserved	Off
4	Reserved	Off

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Server Feature Board Switch Settings

The following table defines the function for each switch setting:

Table C-3
Server Feature Board Configuration
Switch Settings (SW1)

Switch	Function	Default Position
1	On = Disable Video	Off
2	Reserved	Off
3	Reserved	Off
4	Reserved	Off
5	Reserved	Off
6	Reserved	Off
7	Reserved	Off
8	Reserved	Off

SCSI Device Jumper Settings

No two SCSI devices connected to the same SCSI controller can have the same SCSI ID. If another SCSI device is connected to the same controller, check its SCSI ID before beginning the installation procedure for the additional device. The SCSI ID is set by jumpers located on each SCSI device. Refer to your SCSI device option documentation.

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